APPENDIX A

13. A method for identifying a candidate compound useful as a contraceptive, comprising:

a) contacting MSH5 with a test compound;

b) determining the activity or expression of MSH5 in the presence of said test compound;

c) selecting a compound that inhibits the activity or expression of MSH5; and

d) identifying said selected compound as a candidate compound useful as a contraceptive.

24. The method of claim 13, wherein said compound is an antisense MSH5 nucleic acid molecule.

25. The method of claim 13, wherein said compound is a small molecule.

26. The method of claim 13, wherein said compound is an MSH5 antibody.

27. The method of claim 13, wherein said compound is a peptide.

28. The method of claim 13, wherein said compound is a peptidomimetic.

29. The method of claim 13, wherein said compound inhibits the activity of an MSH5 substrate.

30. A method for identifying a candidate compound useful as a contraceptive, comprising:

a) contacting a cell expressing MSH5 with a test compound;

b) determining the expression of the MSH5 gene or the activity of MSH5 in the presence of said test compound;

c) selecting a compound that inhibits the expression of the MSH5 gene or the activity of MSH5; and

d) identifying said selected compound as a candidate compound useful as a contraceptive.

31. A method for identifying a candidate compound useful for inhibiting chromosome synapsis in a cell, comprising:

a) contacting MSH5 with a test compound;

b) determining the activity of MSH5 in the presence of said test compound;

c) selecting a compound that inhibits the activity of MSH5; and

d) identifying said selected compound as a candidate compound useful for inhibiting chromosome synapsis in a cell.

32. A method for identifying a candidate compound useful for inhibiting chromosome synapsis in a cell, comprising:

a) contacting a cell expressing MSH5 with a test compound;

b) determining the expression of the MSH5 gene or the activity of MSH5 in the presence of said test compound;

c) selecting a compound that inhibits the expression of the MSH5 gene or the activity of MSH5; and

d) identifying said selected compound as a candidate compound useful for inhibiting chromosome synapsis in a cell.

33. The method of claim 32, wherein said cell is an oocyte or a spermatocyte.

34. A method for identifying a candidate compound capable of preventing fertilization in a subject comprising:

a) contacting MSH5 with a test compound; and

b) assaying for modulation of the expression or activity of MSH5 in the presence of said test compound, wherein inhibition of the expression or activity of MSH5 by the

test compound identifies the test compound as a candidate compound capable of preventing fertilization in a subject.

35. A method for identifying a candidate compound capable of preventing fertilization in a subject comprising:

a) contacting a cell expressing MSH5 with a test compound;

b) assaying for modulation of the expression or activity of MSH5 in the presence of said test compound, wherein inhibition of the expression or activity of MSH5 by the test compound identifies the test compound as a candidate compound capable of preventing fertilization in a subject.

36. A method for identifying a candidate compound useful as a contraceptive comprising:

a) contacting MSH5 with a test compound; and

b) assaying for modulation of the expression or activity of MSH5 in the presence of said test compound, wherein inhibition of the expression or activity of MSH5 by the test compound identifies the test compound as a candidate compound useful as a contraceptive.

37. A method for identifying a candidate compound useful as a contraceptive comprising:

a) contacting a cell expressing MSH5 with a test compound;

b) assaying for modulation of the expression or activity of MSH5 in the presence of said test compound, wherein inhibition of the expression or activity of MSH5 by the test compound identifies the test compound as a candidate compound useful as a contraceptive.

38. The method of claim 30, wherein said compound is an antisense MSH5 nucleic acid molecule.

39. The method of claim 30, wherein said compound is a small molecule.

40. The method of claim 30, wherein said compound is an MSH5 antibody.

41. The method of claim 30, wherein said compound is a peptide.

42. The method of claim 30, wherein said compound is a peptidomimetic.

43. The method of claim 30, wherein said compound inhibits the activity of an MSH5 substrate.

44. The method of claim 34, wherein said compound is an antisense MSH5 nucleic acid molecule.

45. The method of claim 34, wherein said compound is a small molecule.

46. The method of claim 34, wherein said compound is an MSH5 antibody.

47. The method of claim 34, wherein said compound is a peptide.

48. The method of claim 34, wherein said compound is a peptidomimetic.

49. The method of claim 34, wherein said compound inhibits the activity of an MSH5 substrate.

50. The method of claim 35, wherein said compound is an antisense MSH5 nucleic acid molecule.

51. The method of claim 35, wherein said compound is a small molecule.

52. The method of claim 35, wherein said compound is an MSH5 antibody.

53. The method of claim 35, wherein said compound is a peptide.

54. The method of claim 35, wherein said compound is a peptidomimetic.

55. The method of claim 35, wherein said compound inhibits the activity of an MSH5 substrate.

56. The method of claim 36, wherein said compound is an antisense MSH5 nucleic acid molecule.

57. The method of claim 36, wherein said compound is a small molecule.

58. The method of claim 36, wherein said compound is an MSH5 antibody.

59. The method of claim 36, wherein said compound is a peptide.

60. The method of claim 36, wherein said compound is a peptidomimetic.

61. The method of claim 36, wherein said compound inhibits the activity of an MSH5 substrate.

62. The method of claim 37, wherein said compound is an antisense MSH5 nucleic acid molecule.

63. The method of claim 37, wherein said compound is a small molecule.

64. The method of claim 37, wherein said compound is an MSH5 antibody.

65. The method of claim 37, wherein said compound is a peptide.

66. The method of claim 37, wherein said compound is a peptidomimetic.

67. The method of claim 37, wherein said compound inhibits the activity of an MSH5 substrate.

68. A method for identifying a candidate compound useful for stimulating chromosome synapsis in a cell, comprising:

a) contacting MSH5 with a test compound;

b) determining the activity of MSH5 in the presence of said test compound;

c) selecting a compound that stimulates the activity of MSH5; and

d) identifying said selected compound as a candidate compound useful for stimulating chromosome synapsis in a cell.

69. A method for identifying a candidate compound useful for stimulating chromosome synapsis in a cell, comprising:

a) contacting a cell expressing MSH5 with a test compound;

b) determining the expression of the MSH5 gene or the activity of MSH5 in the presence of said test compound;

c) selecting a compound that stimulates the expression of the MSH5 gene or the activity of MSH5; and

d) identifying said selected compound as a candidate compound useful for stimulating chromosome synapsis in a cell.